

WHAT IS CLAIMED IS:

1-7 (Canceled)

8. (New) A muffler for exhaust systems of vehicles, comprising

5 - a tubular shell that is internally lined with a noise-deadening material and is closed at its ends by a front wall provided with an inlet connectable to receive exhaust gas, and by a rear wall, a first chamber and a second chamber being defined within the tubular shell, which are separated by a transverse wall having an inlet opening and an outlet opening,

10 - a perforated inlet pipe extending within the first chamber from the inlet to the inlet opening,

- gas-piping means extending within the first chamber and having one end open to said outlet opening, and the other end connectable to exhaust pipes, wherein said inlet opening and outlet opening are substantially equal in diameter to the inlet pipe, and are connected to each other via a toroidal duct
15 that is arranged within the second chamber and is substantially equal in diameter to the inlet pipe.

9. (New) The muffler of claim 8, wherein said toroidal duct has perforated bands of a width in the range $1/8$ to $1/4$ of the duct perimeter, and extending on the upper surface and on the lower surface of the duct astride the median
20 line of the torus.

10. (New) The muffler of claim 9, wherein the width of said bands is equal to $1/6$ of the duct perimeter.

11. (New) The muffler of claim 8, wherein said gas-piping means comprise pair of perforated pipes having two converging ends welded to said outlet
25 opening and in mutual contact along respective flattened surfaces, so that their profile at said transverse wall substantially matches with the profile of the outlet opening.

12. (New) The muffler of claim 11, wherein said front wall has at least one outlet, and in that a corresponding one of said perforated pipes leads to said
30 outlet to be connected to exhaust pipes external to the shell.

13. (New) The muffler of claim 12, wherein said front wall also has a first reflux hole, and comprising

- a toroidal joint having two ends which are externally welded to said front wall at said outlet and at said reflux hole respectively, and

5 - an outlet pipe extending inside the shell from said reflux hole to an exhaust outlet on the rear wall.

14. (New) The muffler of claim 13, wherein said outlet pipe comprises a perforated end pipe extending from said front wall to a port on said transverse wall, and a tail pipe extending from said port to said exhaust

10 outlet.